

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
9 September 2005 (09.09.2005)

PCT

(10) International Publication Number
WO 2005/081897 A3

(51) International Patent Classification:
A61K 38/04 (2006.01)

(21) International Application Number:
PCT/US2005/005381

(22) International Filing Date:
18 February 2005 (18.02.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
10/783,699 20 February 2004 (20.02.2004) US

(71) Applicant (for all designated States except US): AC IMMUNE SA [CH/CH]; BPFL - PSB Building B, CH-1015 Lausanne (CH).

(72) Inventors; and

(75) Inventors/Applicants (for US only): NICOLAU, Yves, Claude [FR/US]; 165 Greenwood Street, Newton, Massachusetts 02459 (US). ELISEEV, Alexey [US/US]; 419 Washington Street, #1, Brookline, Massachusetts 02446 (US). LEHN, Jean-Marie [FR/FR]; 6, rue des Pontonniers, F-67000 Strasbourg (FR).

(74) Agents: PRATT, John, S. et al.; Kilpatrick Stockton LLP, 1100 Peachtree Street, Suite 2800, Atlanta, GA 30309 (US).

(81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

(88) Date of publication of the international search report:
25 October 2007

For two-letter codes and other abbreviations, refer to the "Guidelines Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: METHODS AND COMPOSITIONS COMPRISING NON-PEPTIDE SMALL MOLECULES THAT SOLUBILIZE BETA AMYLOID PEPTIDE FIBER

(57) Abstract: The present invention comprises novel compositions and methods for the treatment of neurological diseases associated with beta amyloid peptide. In particular, the present invention is directed to Aβ fiber solubilization, for the treatment of amyloid-associated diseases such as Alzheimer's disease, and is described herein as being achieved by using small molecules binding to Aβ fiber. The present invention further comprises novel methods of designing and screening compositions for the treatment of neurological disease wherein the design aspect comprises the modeling of molecular scaffolds having optimal structural characteristics that enable the development of small molecule compositions of non-peptide nature having desirable solubilization effects on amyloid plaques. In one embodiment, the design of the compounds comprises a molecular structure with three chemical domains that include a melatonin-like domain, a nicotine-like domain and a peptide-like domain for binding to Aβ.

WO 2005/081897 A3

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US05/05381

A. CLASSIFICATION OF SUBJECT MATTER

IPC: A61K 38/04(2006.01)

USPC: 514/17

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
: 514/17

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
EAST

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	US 6172043 B1 (Ingram et al.) 09 January 2001 (09.01.2001), column 1, lines 13-17; column 4, lines 13-34.	1-20

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

Special categories of cited documents:	
"A" document defining the general state of the art which is not considered to be of particular relevance	"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
"E" earlier application or patent published on or after the international filing date	"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
"O" document referring to an oral disclosure, use, exhibition or other means	"A" document member of the same patent family
"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

25 June 2007 (25.06.2007)

Date of mailing of the international search report

05 SEP 2007

Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450

Authorized officer

Valerie Bell-Harris for
Zohreh Vakili

Telephone No. 571-272-1600